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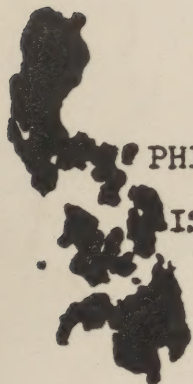


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MEDICAL SECTION

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GENERAL HEADQUARTERS
FAR EAST COMMAND

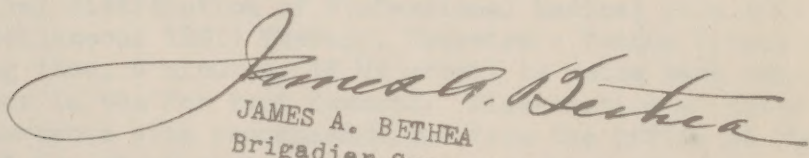
APO 300

TO: All Personnel of the Medical Department, Far East Command

As Surgeon, Far East Command, I extend Christmas Greetings to all Medical Department personnel.

Your past year's record is one accomplished in a highly commendatory manner. The general good health of troops in the Far East Command can be attributed to the effort and cooperation of all Medical Department personnel. This achievement, in an area where hazards of disease are great, reflects the high standard of medical service that has been individually contributed. To all of you who have contributed so much to achieve this, my sincere thanks.

A Merry Christmas and a Happy New Year.


JAMES A. BETHEA
Brigadier General
U.S. Army

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GENERAL HEADQUARTERS FAR EAST COMMAND MEDICAL SECTION

CIRCULAR LETTER)
: NO. 12)

APO 500
1 December 1947

PART I

ADMINISTRATIVE

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I. Organization of the Medical Section

Arrivals - Medical Section. Captain James D. Grindell, MSC, formerly of the 8141 Service Detachment (Medical Service Philippines) assigned to Plans and Operations Division.

II. Initial Distribution of Medical Film

Initial distribution of Professional Medical Film 5054 (formerly Miscellaneous 1291) Therapy, Exercise - Tendon Transplantation - (running time, 8 minutes, 16 MM print) is being made available to installations in the Far East Command. Distribution of these films is made in accordance with recommendations from the Office of The Surgeon General for showings to interested medical personnel.

III. Dental Research Course Announced

The Army Medical Research and Development Board has entered into a contract with the University of Rochester School of Medicine and Dentistry, Rochester, New York, to conduct a planned program of Dental research in which Army Dental Corps officers will participate.

The program embraces research and studies in connection with the bacteriological and biochemical aspects of dental caries with special emphasis on the possible importance of proteolytic bacteria in the causation of caries. This investigation will be conducted in the Departments of Bacteriology and Dental Research, under the direction of Dr. George P. Berry, Professor of Bacteriology, and Dr. J. E. Gilda, Senior Fellow

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in Dentistry. The study will be carried on in close cooperation with Dr. Basil G. Bibby, Director of the Eastman Dental Dispensary.

Also included in the program is the assignment and enrollment in the University of one or more selected Dental Corps officers to participate in this and subsequent studies and to pursue advanced study in the biological sciences as graduate students.

It is contemplated that additional qualified Army Dental Corps personnel will be selected for training and participation in other fields of dental research having military application.

IV. Army Epidemiological Board

The thirteenth meeting (seventh annual meeting) of the Army Epidemiological Board was held at the Pentagon Building, Washington, D.C., on 8 May 1947. Extract from the minutes concerning the Far East Command are submitted as follows:

***6. The proposals and projects of the Japanese B Encephalitis group as presented in the recommendations of Dr. Hammon to the Surgeon, Far East Command, (see Far East Command Circular Letter No. 11) dated 16 April 1947, and further elaborated by Dr. Hammon, were reviewed and the following recommendations adopted:

a. "That the Navy Medical Research Unit No. 2 (NAMRU #2) be invited to participate in the Japanese B Encephalitis studies in Japan this summer with the group from the Virus and Rickettsial Commission."

b. "That the proposal for the study of Japanese B Encephalitis vaccination in Japanese children be approved and undertaken and that vaccine in essential amounts be set aside for this work."

c. "That the recommendations of Dr. Hammon for Japanese B Encephalitis vaccination in Japan this summer be approved except that the recommendations for vaccination of American children be revised to state that vaccination is available for children below the age of one year at a dosage of one-half that for the adult and on a voluntary basis."

d. "That the recommendation of Dr. Paul and Dr. Hammon for the carrying out of controlled studies over a period of several years of Japanese B Encephalitis by the Virus and Rickettsial Commission in collaboration with the Medical Section of GHQ, FEC, The Public Health and Welfare Section of SCAP, and the Surgeon's Office, and the 406th Medical General Laboratory of the Eighth Army be approved."

e. "That The Surgeon General take action to secure the aid of Colonel Tigertt of the 406th Medical General Laboratory in Japan in connection with the activities of the Virus and Rickettsial Disease Commission's field studies with Japanese civilians this year."

V. Veterinary Publication

A recent publication of interest to all Veterinary Corps personnel is TB MED 226 "Veterinary Food Inspection Procedure."

This publication is designed as a procedure guide for veterinary officers and veterinary enlisted technicians who may be engaged in conducting any one of the many types of veterinary food or sanitary inspections either in the zone of interior or overseas.

VI. Recent Department of the Army and FEC Publications

AR 615-361, C1, 3 September 1947, Discharge, Medical; Procedure after Discharge is Authorized.

AR 40-1010, C3, 2 October 1947, Medical Department. Dental Reports, Returns and Records.

CIR 234, WD, 27 August 1947, Army Safety Program Reporting Procedure.

CIR 249, WD, 9 September 1947, Foreign Service.

CIR 257, WD, 16 September 1947, Training of Military Personnel at Civilian Institutions.

CIR 1, DA, 18 September 1947, Sec III, Property; Sec IV Refrigeration.

CIR 2, DA, Sec I, Field Ration. (WD Cir 120, 1947, Amended)

CIR 4, DA, 22 September 1947, Sec I, Influenza, Vaccination Procedures. (Sec V, WD Cir 121, 1947, Rescinded)

CIR 7, DA, 25 September 1947, Sec IV, Officer Grade Adjustments. Demotion Criteria.

CIR 8, DA, 26 September 1947, Sec III, Assignment of Hospital Patients. Procedure. (WD Cir 238, 1947, Amended). Sec VII, Report of Medical Department Personnel. Reports Control Symbol MED 34. (Sec II, WD Cir 347 Amended)

CIR 10, DA, 30 September 1947, Appointment in the Officers Reserve Corps of those officers now on Extended Active Duty.

CIR 12, DA, 1 October 1947, Sec I, Assignment of Hospital Patients. (WD Cir 238, 1947, Amended)

CIR 13, DA, 3 October 1947, Artificial Eye Program.

CIR 14, DA, 6 October 1947, Appearance of Retired Army Officers as Council before Army Retiring and other Boards.

CIR 15, DA, 7 October 1947, Sec IV, Physical Training Program. Provisions.

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CIR 16, DA, 8 October 1947, Sec I, Enlistment and Assignment of Partially Disabled Combat Wounded Veterans of World War II. (WD Cir 6, 1947, Amended)

WD Memo 40-590-7, 17 December 1946, Convalescent Program in Army Hospitals.

WD Memo 40-590-9, 11 April 1947, Addresses of Non-Federal Authorities Regarding Hospitalization of Psychotic Patients.

WD Memo 40-590-11, 26 August 1947, Emergency Maternity and Infant Care Program for Wives and Infants of Certain Categories of Military Personnel.

TECHNICAL MANUAL 8-260, Changes 1, 2, & 3, WD, 16 July 1941. Fixed Hospitals of the Medical Department (General and Station Hospitals)

CIR 96, GHQ, FEC, 1 October 1947, Sec II, Certificate of Death

CIR 150, Hq Eighth Army, 17 September 1947, Paragraph 3, Screening Applicants for Attendance at Officer Candidate Schools and for Commission in Officers' Reserve Corps.

CIR 151, Hq Eighth Army, 19 September 1947, Sec I, Additional Payment to Certain Medical and Dental Corps Officers.

PART II

TECHNICAL

SUBJECT

SECTION

| | |
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| Compound 1080, Rodent Poison. | IX |

VII. Diagnosis and Treatment of Thyroglossal Duct Cyst
by Captain C. L. Clark, MC, 49th General Hospital
Tokyo, Japan

The thyroid gland is a derivative of three primordial structures, one median and two lateral. The median thyroid component, which contributes the most part of the thyroid gland, first appears as a well defined fold or evagination in the ventral walls of the primitive pharynx at the point at which the tuberculum impar and the two lateral anlagen of the tongue join between the first and second pharyngeal pouches.

This occurs in the embryo of 3 to 5 mm. or before the second pair of somites has been definitely separated off, and according to Weller, consists in a proliferation, rather than in a primary differentiation of pharyngeal cells (entoderm).

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This epithelial evagination, whose location in later life is marked by the foramen cecum on the posterior portion of the roof of the tongue, is transformed into a stalked vesicle by the time the embryo has reached a length of 2.5 mm. This vesicle or diverticulum grows downward and backward from its point of origin as a tubular duct, (thyroglossal duct) which bifurcates at its distal portion to form the thyroid lobes. During its transitory existence, the duct proper passes through or adjacent to an area which at a later time becomes the hyoid bone. Its distal end corresponds to the region which later becomes the pyramidal lobe of the thyroid. This epithelial lined duct usually atrophies during the sixth week of fetal life. Occasionally, however, it persists in part or in whole to form the thyroglossal duct, a narrow tube extending through the center of the tongue for a variable distance toward the thyroid gland.

The congenital tumors or sinuses are not common. Sistrunk in 1920, reported 31 cases noted in the examination of 86,000 consecutive patients at the Mayo Clinic. This apparently is about the experience of other observers. The cysts appear at all ages from birth to advanced age. The sex ratio is a little less than two to one, the males predominating.

Usually there is little difficulty in making a diagnosis when these patients present themselves; the most important influencing factor is the presence or absence of infection. The history is characteristic in most cases. In early childhood or later in life a simple, painless, cystic swelling is noted in the median line of the neck. Except for the cosmetic effect the patient is not inconvenienced until evidences of infection present themselves. With the appearance of inflammation and its attendant discomfort, the cyst usually is incised and with the discharge of a small or large amount of serous fluid under some pressure, the tension is relieved. With recession of symptoms, the neck returns to normal, except for a small dimple which marks the outlet of the sinus. Drainage from the sinus is not continuous; almost invariably it heals, with occasional filling and subsequent discharge of mucopurulent material either into the mouth through the foramen cecum or through the opening in the neck.

A cyst or tumor in the middle line of the body, whether in the neck or elsewhere is almost certain to be developmental in origin. In the neck such cysts may be thyroglossal or dermoid in origin. A thyroglossal cyst or tumor as has been pointed out arises from the vestigial remains of the thyroglossal tract, which passes from the foramen cecum at the base of the tongue to the isthmus of the thyroid gland. If the tumor is solid the structure is that of the thyroid gland, if cystic, the cavity is lined by columnar epithelium. The masses are much commoner below than above the hyoid bone, but they may occur at the back of the tongue. They are firmly attached to the hyoid. A dermoid cyst is a sequestration dermoid formed by inclusion of the epidermal elements during closure of the midline of the neck. The cyst wall is therefore lined by stratified epithelium of epidermoid type, with its associated hair follicles, sweat glands and sebaceous glands. The cyst contains sebaceous material produced by these glands.

Two other types of cysts may be present in the neck. A branchial cyst is a circumscribed collection of fluid in a persistent branchial

cleft. It occurs along the anterior border of the sterno-mastoid muscle anywhere between the angle of the jaw and the sternal notch but most commonly beside the middle third of the muscle. It appears in the subcutaneous tissue as a rounded mass, not moveable and tender only when secondarily infected. Hygroma of the neck, a congenital abnormality of the lymphatic system, presents itself as a cystic swelling usually situated just above the clavicle at the base of the neck. It may be single or lobulated, is fluctuant, somewhat moveable, contains fluid which is either clear or serosanguinous, and can be transilluminated. Its greater mobility and translucency differentiates it from a branchial cyst.

The cure of the condition necessitates complete removal of the epithelium-lined tract. Unless the tract is removed completely, the condition often recurs. As a rule, the cyst and the portion of the tract lying below the hyoid bone may be dissected out without difficulty, but above the hyoid bone the tract is so small and friable that it is broken off easily and consequently is difficult to remove. The highest percentage of cures is obtained through an operation in which a portion of the hyoid bone, the thyroglossal tract and the tissues surrounding it, are removed without an attempt definitely to isolate the duct. The operation is usually performed through a transverse incision, about 5cm. long across the neck at the level of the hyoid bone. The skin and platysma muscles are reflected. The cyst is found lying between the raphe connecting the sternohyoid muscles. It is dissected free up to the hyoid bone. At this point the tract usually passes through the hyoid bone, although it may be found passing either above or below it. The muscles are separated from the center of the hyoid bone, and about 0.3 cm. of the bone is removed; then, without any attempt to isolate the duct, the tissues are cored out from this point directly to the foramen cecum, and the duct with the tissues surrounding it for a distance of about 0.3 cm on every side is removed. In doing this it is necessary to keep clearly in mind the direction of the foramen cecum. This corresponds to a line drawn at an angle of 45 degrees, backward and upward, through the intersection of lines drawn horizontal and perpendicular to the superior central portion of the hyoid bone. In the dissection the duct, a portion of the hyoid bone, a portion of the raphe joining the mylohyoid muscles, a portion of each of the geniohyoglossus muscles, and the foramen cecum are removed. The opening in the mouth is closed and the geniohyoglossus muscles are drawn together with interrupted catgut sutures. The tissue surrounding the cut ends of the hyoid bone are brought together with chromic catgut sutures in such a manner as to approximate the edges of the bone. A small rubber tube is introduced down to this point and the skin closed.

Presentation of Case: A 19 year old white soldier entered this hospital on 9 July 1947 with a chief complaint of a draining sinus located in the midline of the submental triangle of the neck. The patient stated that he had first noticed a small lump or swelling just three months prior to admission and he thought it followed an episode of upper respiratory infection. The patient stated that every time he shaved he usually removed the crust that was over the opening and it would drain. This had not increased in size. Physical Examination: Examination revealed a draining sinus located superficially in the midline of the submental triangle of the neck. The opening was surrounded by rather dense indurated scar tissue. A slight amount of purulent material could be seen in the

sinus opening. The indurated mass was not painful to palpation. There was no infra hyoid tumor mass. The thyroid gland was normal on palpation. The pharynx was negative and the foramen cecum was not demonstrable. The submaxillary glands were not palpable. Preoperative diagnosis of sebaceous cyst of the midline was made. An elliptical incision was made over the draining sinus in the submental triangle. It contained a small amount of old purulent material. Upon dissection it was found to be a sinus tract extending inferiorly toward the hyoid bone superficial to the mylohyoid muscle in the subcutaneous tissue. When the tract reached the hyoid bone it turned on itself and extended superiorly toward the base of the tongue in the general direction of the foramen cecum. Diagnosis of thyroglossal sinus was then made and a second incision was made transversely over the hyoid bone. The muscles of the neck were exposed, the sternohyoid muscle was divided in the midline. The hyoid bone was exposed and the tract was seen to run directly through the central portion. A piece of the hyoid was excised and dissection of the tract continued up to the tongue, a portion of the base of the tongue was included in the dissection and the entire tract removed. There was no cyst found. The wound was flushed with saline, a single rubber dam drain was placed for drainage and the two incisions were closed with silk.

Recovery was uneventful. On the 7th post-operative day sutures were removed, the incisions were well healed with no infection. On the 8th post-operative day the patient returned to duty.

VIII. Surgical Management of Perforated Duodenal Ulcer
(Case Histories). Three case reports by Col.
Norman W. Anderson, MC, Chief of Surgical Service,
49th General Hospital, Tokyo, Japan. Discussion by
Lt. Col. Warner F. Bowers, MC, Surgical Consultant,
Far East Command.

History: In each of the three patients here presented there is a definite history referable to epigastric symptoms but this in my experience is quite unusual. Most patients who develop acute duodenal ulcers which perforate have no history of previous difficulty. Many times the onset is in an apparently well individual and comes with extreme suddenness. One such patient was seen who, being struck by severe abdominal pain, fell from the seat of a plow thinking that he had been accidentally shot in the abdomen.

Mechanism of Perforation: The majority of perforations occur when the stomach is empty. The mechanism of perforation in this instance is believed to be either actual erosion through the wall by acid juice or more likely perforation during hunger contractions. In view of this it seems rational to give frequent small feedings to patients known to have an ulcer which may perforate in order to reduce the vigor of hunger contractions. The difficulty in this regard is that the diagnosis of acute ulcer rarely is made before perforation. In perforations which occur with the stomach full the mechanism obviously is one of rupture from overdistension of the thin ulcer base. These are the more dangerous from the standpoint of mortality rate as will be discussed later.

Pneumoperitoneum and Rigidity: These subjects have been discussed previously in the case report of pancreatitis but briefly in summary it should be recalled that Rigler and Paine in 1938 showed that as little as 4 cc. of air can be demonstrated under the diaphragm if there are not preventing factors such as adhesions. Rigidity, as is well known, is extreme because of the severe chemical irritation of gastric and duodenal content.

Bacteriological Study of Peritoneal Fluid: Davison in 1939 published a paper in Surgery, Gynecology and Obstetrics which showed that peritoneal fluid cultured from patients perforated within six hours is sterile in about 85% of the cases. This picture rapidly changes, however, so that by the time the 12-hour period is reached the situation is practically reversed and at least 75% of the patients then show bacteria in the peritoneal fluid. This is of some significance in operative management. It is well known that there is no purpose in draining the peritoneal cavity in patients with a sterile fluid. Furthermore, there is considerable doubt as to the ability actually to drain the peritoneal cavity in any case because of the fact that omentum and loops of bowel in six or eight hours effectively wall off the drain so that it functions for an extremely local area only. For these two reasons the use of a drain in the peritoneal cavity does not seem warranted but a drain within the wound is sometimes advisable to obviate wound infection. The other point in this regard relates to the use of antibiotics. Personally, I never have used the sulfa drugs or penicillin in a case of perforated peptic ulcer and have never had cause to regret this course of action. If an infected fluid is present their use is rational but this would seem to be in the minority of cases.

Is Acute Ulcer the Same Lesion as Chronic Duodenal Ulcer? This point seems to be evaded in most discussions of this subject and it is assumed by the majority of surgeons that perforated ulcers require the same type management as chronic ulcers. This, in my opinion, is not the case. Acute ulcers which perforate usually are symptomless and, as will be shown later, usually heal without residual. Furthermore, they almost routinely are located on the anterior wall of the duodenum just distal to the pyloric vein. This is almost never the site of chronic duodenal ulcer and, as is well known, the chronic type of duodenal ulcer usually produces symptoms over a long period of time, rarely heals without residual scar, often bleeds, and rarely perforates. The basic mechanism of development, however, may be similar and, as will be suggested later, probably psychiatric management is more important than medical management, at least early in the course.

Results of Experimental Perforations of the Gastro-intestinal Tract: In 1937 I published a paper with Wangenstein and Bergh dealing with the results of experimental, unsutured perforations at various levels of the gastro-intestinal tract. Only the gastric perforations will be mentioned here. It was found that unsutured perforation of the empty stomach was followed by death of the animal in only 7% of the cases, whereas if the stomach contained food at the time of perforation the mortality rate rose to 87%. However, if a sclerosing solution was previously injected into the stomach wall and perforation was subsequently made through

this indurated area simulating the induration of ulcer, the mortality rate was 40%. Several factors are apparent from this observation. First, the normal gastric acidity is rather highly bacteriostatic or bactericidal. Neutralization of this acidity by food allows an extremely rapid increase in mortality rate. This also is borne out clinically by the fact that perforations of gastric carcinoma are highly fatal due to lack of gastric acid in these cases. The other point of interest is that the induration of ulcer interferes markedly with the normal ability of the stomach wall to close itself when perforated. The mechanism of spontaneous closure of gastric perforations has been observed to be first, a protrusion of a rosette-like mass of mucosa which effectually stops immediate leakage. This is followed quickly in most instances by an adherence to adjacent organs or migration of the omentum to cover this area of injury. Obviously the induration of ulcer prevents the normal protrusion of mucosa. In no clinical case have I ever seen protruding mucosa through the area of perforation.

Factors Influencing Development of Peritonitis: The mortality following rupture of the gastro-intestinal tract as observed by the clinician is governed by the same factors that determine the mortality in experimental perforation. These may be listed briefly as follows:

a. The number and virulence of the escaping organisms.

- (1) Size of the perforation
- (2) Length of time the perforation remains open
- (3) Number of organisms at the level of the perforation
 - (a) Site of the perforation
 - (b) Length of time after the ingestion of food
- (4) Amount and fluidity of material in the viscus at the time of perforation
- (5) Forces tending to carry contents of the viscus out into the peritoneal cavity

b. Resistance of the host.

- (1) General
- (2) Local - may be affected by duodenal juices

Mortality Rate: The mortality rate quoted in the literature ranges from 5 to 45% with an average of around 20%. This extreme range is due partly to the general tendency among surgeons to apply a set procedure when a certain diagnosis is made without regard to the individual patient. In the past it has been felt that perforation of the duodenum by ulcer was always a surgical problem. It is believed, however, that more intelligent application of surgical principals to management of these cases definitely will lower the mortality rate. Personally, I have never lost a patient having a perforated peptic ulcer nor has one ever been lost on my service. Some have been operated upon; other have been treated conservatively as will be discussed shortly.

The Conservative Management of Perforated Peptic Ulcers:
Within the last few years conservative management of perforated peptic

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ulcers has been advocated and this matter at the present time is highly controversial because of the radically different results reported. Olson and Norgore in 1946 reported a series of 17 patients treated conservatively with a mortality rate of 41% as compared to 138 patients treated operatively with a mortality of 28%. As opposed to this, Col. Seeley and his group in Brooke General Hospital in June of 1947 reported a consecutive series of 11 patients with perforated duodenal ulcers treated conservatively with no mortality. It is believed that neither operative nor conservative management should be advocated routinely for all cases. By a review of the factors listed above in development of peritonitis it will be seen that most of these factors cannot possibly be determined early by conservative management. It will never be possible for the clinical observer to estimate the size of the perforation and it will always be difficult to gauge the number of organisms at the level of perforation even though the time interval between ingestion of food and perforation is known. Realizing that the peritoneal fluid early is sterile and being cognizant of the previously mentioned factors few surgeons will be willing to risk conservative management of patients seen within the first six to twelve hours. The mortality rate usually quoted grossly is a 5% increase for each hour of duration of the perforation. This means then, roughly, that if the patient survives 12 hours or more and seems to be in fairly good clinical condition as evidenced by physical examination and laboratory reports on blood picture, the patient probably is handling the perforation satisfactorily and operation most likely is not indicated. These factors are well brought out in the three cases which are presented. The patient operated upon had a perforation of less than six hours duration and had a fairly large rupture with no attempt at spontaneous closure. This patient, with his severe rigidity probably would have done poorly on conservative management. The other patients, however, although they showed definite evidence of perforation by X-ray examination were not as seriously ill and the best surgical judgment was that these patients were handling the perforation without assistance. In summary of this point; what patients should be operated upon and what patients should be treated conservatively? It is believed that patients seen within the first 6 hours and probably within the first 12 hours with marked abdominal rigidity are candidates for operative repair. Patients seen after 12 to 24 hours and probably patients seen earlier who are having regression of symptoms and signs are candidates for conservative handling.

Preoperative Care: It is to be emphasized that patients with perforated peptic ulcer rarely show shock. The pulse is usually full and bounding and the blood pressure is normal. On the contrary, patients who have peritonitis later in the course of perforated peptic ulcer are apt to show shock which does not respond to intravenous injections or transfusions. The preoperative management of patients who are to be operated upon usually then calls for nothing more than the recording and administration of preoperative medication. Patients who require transfusion or chemical determination of electrolyte balance often are not candidates for surgery.

Postoperative Regime: If one believes that the acute ulcer is not the same lesion as chronic duodenal ulcer then no special postoperative regime is required other than intragastric suction for a period of four or five days until feedings may safely be started. I have never

used the special diets or Sippy routine in these patients because I do not believe that they have a chronic lesion and therefore do not need, in my opinion, Sippy routine. A consideration of considerably more importance in my opinion relates to whether or not these patients require psychiatric management. It is most likely that psychiatric care is more important than medical management and if instituted early enough perforations probably would not occur. It seems likely that pylorospasm and consequent hyper-acidity are on a psychogenic basis. The question of whether subsequent perforations may take place is pertinent at this point. Patients with tendency to form acute ulcers may perforate subsequently and I have seen at least two patients who perforated three times each. Certainly in such instances psychiatric evaluation is highly desirable.

Conservative Management: The conservative management of perforated peptic ulcer cases is not as new as some recent reports would indicate. Wangenstein and I in 1935 reported four patients treated conservatively. Conservative management consists in continuous intra-gastric or duodenal suction with abdominal hot packs and probably the use of antibiotics. This means also that intravenous fluids must be administered and it does not seem desirable to discuss fluid balance at this point except to say that plasma protein and chloride levels must be kept within normal limits. Usually the tendency is to give too much chloride and a safe rule is that of 3000 cc. of daily administered fluid not more than half should be in saline.

Late Sequelae of Conservative Regime: Follow-up X-ray examinations regardless of whether operative or conservative treatment has been used usually show no abnormality because healing has been complete. This lends further support to the view that the acute ulcer is not the same as the chronic lesion which shows extensive scarring. The only late sequela of importance is intra-abdominal abscess, usually subdiaphragmatic. I have seen two such patients in whom the abscess cavity contained more than 3000 cc of gas and pus. The conservative management of patients for any intra-abdominal condition requires much more careful clinical follow-up and daily evaluation than a patient who is operated upon for the reason that the surgeon must know what is going on within the abdomen by examination of the patient's abdominal wall and evaluation of laboratory reports. Consequently, a considerably higher degree of training in surgery is required for conservative management as compared to the skill required for simple operative closure of a perforation.

Summary: The conservative management of perforated peptic ulcer is a highly controversial subject as yet and is not given unqualified approval for use in all cases. It is believed, however, that conservative management has a definite place in perforated peptic ulcer management in good hands and should be strongly considered so that we do not fall into the error of applying routine treatment. Every case of perforated peptic ulcer, as well as every other surgical patient, should be individualized to the end that the most appropriate treatment for that patient is given.

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Case 1. Ulcer, Peptic, Perforated, Cause Undetermined (Duration 22 Hours)

A 22 year old white staff sergeant was admitted to the 49th General Hospital, at 1500, 9 September 1947, from the 376th Station Hospital. Transfer diagnosis was perforated peptic ulcer. An X-ray film, taken in the upright position, accompanied patient and showed a thin layer of air under each hemidiaphragm (Pneumoperitoneum). At 1700, 8 September 1947, 30 minutes following the evening meal, and one hour following the drinking of two whiskeys, patient was seized with severe crampy upper abdominal pain. The evening meal consisted of potatoes, meat, tomatoes, bread, butter and coffee. During the night the pain increased in severity and he was admitted to the 376th Station Hospital, at 0300, 9 September 1947. On admission temperature was 98.4, pulse 96, respirations 20, WBC 14,200, (Neutrophils 82%). Examination of the abdomen revealed no muscle spasm or rigidity. Tenderness was present in the upper right abdomen. There was no rebound tenderness. On the morning of 9 September 1947, patient complained of severe, intermittent, colicky, upper abdominal pain. Abdominal examination revealed definite muscle spasm of upper and abdominal muscles but no true rigidity; marked epigastric tenderness, and rebound tenderness in both lower abdominal quadrants. Bowel sounds were absent. Following X-ray of abdomen with positive pneumoperitoneum he was transferred to the 49th General Hospital.

Patient stated that for the past year he has had episodes of gnawing abdominal pain in the epigastrium which occurred before meal time and was relieved with rest and food. On several occasions he has had rather severe pain which has always responded without medical treatment.

On admission to the 49th General Hospital patient appeared acutely ill, was complaining of constant epigastric pain, temperature 100, pulse 112, respirations 24, WBC 11,500 (Neutrophils 72%). Marked tenderness and moderate rigidity was present in the upper abdomen, more marked on the right. Rebound tenderness was present. Lower abdomen was soft. Peristalsis was absent.

Treatment for five days was non-operative and consisted of continuous Wangenstein Suction; parenteral fluids of 5% glucose in distilled water, alternating with 5% glucose in normal saline 8 hours; two units of plasma on the 4th day; and 100 mgms of vitamin "C" daily. On the 6th day liquids were well tolerated. On the 7th day soft diet was prescribed. The following morning he was transferred to the Medical Service where he was placed on a convalescent ulcer diet. Within 24 hours of continuous suction patient's abdomen was soft with no evidence of muscle spasm or rigidity. Tenderness remained another 24 hours. Temperature never rose over 100 and was normal on the 5th day. Pulse rate remained around 100 for three days and then dropped to normal. Blood chlorides on 13 September 1947 were reported as 446 mg%. Daily twenty-four hour urines for total chlorides varied from 1.2 Gms to 3.5 Gms.

Follow-up examination by the Medical Service showed stools to be negative for occult blood by benzidine and guaiac test. Gastric

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fractional total acidity 47-57-90-119 and free HCL 35-40-57-97. G.I. X-ray reported on 22 September 1947: "On ingestion of barium no intrinsic pathology was demonstrated in oesophagus, stomach or duodenum. X-ray films also demonstrated a normal appearing stomach and duodenal bulb. This patient demonstrated an unusually rapid emptying of the stomach. It was necessary to give him another glass of barium to obtain X-ray films of the stomach and duodenum. Within four hours the barium had already moved low in the descending colon. Impression: Normal upper GI series."

As of 3 October 1947 patient's convalescence on an ulcer diet has been uneventful and free from pain.

Case 2. Ulcer, Peptic, Perforated, Cause Undetermined (Duration 6½ hours)

A 20 year old white soldier was admitted to the 49th General Hospital from his unit dispensary, at 2030, 1 September 1947, with a diagnosis of possible appendicitis. At 1350, 1 September 1947 patient experienced a sudden, moderately severe, epigastric pain, which did not radiate. Following the onset of pain he vomited six times. The noon meal consisted of meat, potatoes, beets, bread, butter, milk and ice cream. On admission the patient was perspiring freely, showed evidence of acute pain, marked rigidity and tenderness of entire abdomen. Rebound tenderness was moderate and limited to the upper half of the abdomen. Temperature was 99.8, pulse 100, respirations 20, WBC 12,500, Neutrophils 92%. Flat plate of the abdomen in the upright position was immediately ordered and showed air under the diaphragm bilaterally (Pneumoperitoneum).

Patient stated for a period of three weeks prior to admission he had noted mild intermittent epigastric pain, occurring 1-2 hours after meals and occasionally awakening him at night. He had not taken anything for relief.

On return from the X-ray department following demonstration of pneumoperitoneum, patient was re-examined and abdomen was soft with only mild tenderness present. It was felt that the perforation had probably sealed itself off and conservative treatment was indicated.

Treatment for five days was non-operative and identical with that prescribed in case one above. On the 8th day following admission the patient was transferred to the Medical Service where he was placed on a convalescent ulcer diet. During the entire period of conservative treatment on the surgical service patient was fairly comfortable, complaining of only an occasional dull ache in the epigastrium. Within 24 hours after admission temperature dropped to 99, pulse 80 and remained about the same. Blood chlorides on 4 September 1947 reported as 480 mg%. Daily twenty-four hour urines for total chlorides showed normal outputs indicated good function and electrolytic balance.

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Follow-up examination by the Medical Service showed stools to be positive for occult blood on 12 September 1947 by benzidine and quaiac tests. Gastric fraction: Total acidity 19-24-32, free HCL 13-14-28. G.I. X-ray report 18 September 1947: "Upon ingestion of barium the oesophagus and stomach appeared normal. The duodenal bulb never filled completely well and appeared slightly irregular in its contours. The patient complained of no tenderness over the bulb, however, and no ulcer craters were seen. X-ray films likewise do not show a normally filled out duodenal bulb but show no crater. There is no retention in the stomach after 4 hours. Impression: Slightly deformed duodenal bulb. No ulcer crater".

As of 1 October 1947 patient's convalescence on an ulcer diet has been uneventful and free from pain.

Case 3. Ulcer, Peptic (Duodenal), Perforated, Cause Undetermined. (Duration 5 Hours)

A 34 year old white staff sergeant was admitted to the 49th General Hospital at 0500, 14 October 1947 with severe pain in the mid-epigastrium, radiating to the right shoulder, and present for three hours. The onset of pain was sudden awakening him from a sound sleep and had gradually increased in severity. Patient had vomited on two occasions the last vomitus contained some bright red blood. On admission the patient was in acute pain in spite of the administration of two one quarter grains of morphine within a period of two hours. Temperature was 99.6, pulse 106, respirations 30, WBC 9,600, Neutrophils 79%. Examination of the abdomen reveals tenderness throughout, more marked in right upper quadrant, rebound tenderness throughout and muscle spasm with marked rigidity of both rectae muscles. X-ray of the abdomen in the upright and reclining positions showed no pneumoperitoneum.

For the past year patient has experienced epigastric discomfort, indigestion, and dyspepsia, which occurs between meals and at night. Pain and discomfort has never been severe and always relieved by food, coca-cola or soda, the latter resulting in belching with relief.

At 0655, 14 October 1947 patient was operated upon under GOE anesthesia through a right upper para-median incision. The peritoneal cavity contained typical "pea-soup" material. At operation extreme care was taken to ascertain if any plastic exudate was present over a possible perforated ulcer. An indurated ulcer was located on the anterior surface of the duodenum 5 cm. from the pylorus, approximately the size of a half dollar, with a perforation 3 mm in diameter. No plastic exudate was present about the perforation and with each respiration fluid and air was discharged from the duodenum into the peritoneal cavity. The perforation was closed with four sutures of interrupted 4-0 black silk and tied over a piece of omentum. During the operation the patient received 1000 cc of 5% glucose in normal saline. Immediately following admission, during operation, and for six days post-operatively the

patient received continuous Wangensteen Suction. Fluid and electrolytic balance were maintained during the interval with the parenteral administration of 5% glucose in distilled water alternating with 5% glucose in normal saline every 8 hours. Two units of plasma were administered on the 4th post-operative day. 500 mgms of vitamin "C" were administered daily to aid in wound healing. On the sixth post-operative day the tube was clamped and fluids given orally were well tolerated. On the seventh post-operative day a soft diet caused no discomfort. On the eighth post-operative day he was transferred to the Medical Service for further ulcer therapy and evaluation. Patient is asymptomatic.

Twenty four hours following operation muscle spasm and rigidity had disappeared and pain was minimal. Temperature post-operatively never rose above 99, except for first post-operative day when the highest was 100. Sutures were removed on 21 October 1947 and wound was well healed. Blood chemistry performed 21 October 1947 reported: Blood chlorides 560 mg%; Plasma protein 5.7 mg%; CO2 combining power 58.9 volume%.

IX. Compound 1080, Rodent Poison

Recently the new deadly poisonous rodenticide, Compound 1080 (Sodium fluoroacetate) became available for use in this command. It is imperative therefor that medical officers become thoroughly familiar with its physical characteristics, toxic action and treatment.

Sodium fluoroacetate is a stable compound chemically and non-corrosive to most metals. It is very soluble in water and relatively insoluble in organic solvents such as kerosene, alcohol or acetone. Neither is it soluble in animal or vegetable fats and oils. Dry sodium fluoroacetate is hydrophilic and when exposed to air may become sticky.

The favorable features of 1080 appear to be high toxicity to all species of rodents tested, excellent acceptance, absence of significantly objectionable taste and odor, non-volatility, non-toxicity on the skin and non-irritation of the unbroken skin of workers. In addition, rats apparently do not develop any significant tolerance to sodium fluoroacetate on ingestion of sub-lethal amounts nor, in general, are they able to detect the poison after the ingestion of lethal amounts. Although they may tend to develop a slight aversion to sodium fluoroacetate bait during a poisoning operation, this is not sufficiently pronounced to affect the efficiency of operations.

Disadvantages inherent in sodium fluoroacetate is actual poisoning in man and other animals. There is no danger of absorbing sodium fluoroacetate through the unbroken skin and probably not great danger of inhaling lethal amounts when working with the powder. The main danger will come from the ingestion of this compound. It is water soluble and therefore the possibility of the contamination of drinking water must be held in mind. The hazard of actual poisoning of humans is heightened by the reason of sodium fluoroacetate being a white powder without odor and with only a slight salty taste. It

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must be emphasized that there is a complete lack of any specific therapy or antidote. Treatment of poisoning is entirely symptomatic and it has proven impossible to save an animal once ventricular fibrillation has set in.

Sodium fluoroacetate exerts its action on the myocardium and central nervous system in monkeys and presumably in man. The effect on the heart is the primary cause of death. It is first manifested by pulsus alternans. This evidenced by alternation of heart sounds, alternation in force of contraction leading to a 50% pulse deficit and alternation in the electrocardiogram. Later, premature systoles appear and death evidently results from ventricular fibrillation. Central nervous system reaction is manifested by epileptiform convulsions.

In the event of sodium fluoroacetate poisoning the patient should be controlled by the judicious use of barbiturates of medium duration of action such as sodium amytal. The intravenous route of administration should be utilized carefully and the case followed, preferably by the electrocardiogram. Evidence of arrhythmia or marked change in the shape of the T-wave is of great prognostic significance.

Aside from complete rest and adequate sedation to allay apprehension, there is little that can be done to prevent the progression of cardiac symptoms. Should ventricular fibrillation occur, the heroic procedure of intracardiac injection of 5 cc of a 1% solution of procaine hydrochloride might be attempted to restore an organized heart beat.

Symptoms of sodium fluoroacetate intoxication will usually subside within 12-24 hours. However, if the patient gives evidence of any sign of action on the myocardium, he should be kept at complete bed rest for a period of three days.

PART III

STATISTICAL

Evacuation:

1. During the period 30 August to 26 September 1947, the following patients were evacuated from the several major commands:

| | <u>AIR</u> | <u>WATER</u> | <u>TOTAL</u> |
|-----------|------------|--------------|--------------|
| JAPAN | 225 | 202 | 427 |
| *KOREA | 96 | 0 | 96 |
| PHILRYCOM | 45 | 68 | 113 |
| MARBO | 79 | 0 | 79 |

*Patients evacuated by air to Japan from Korea for onward evacuation.

2. Evacuations per thousand
strength for period 30
August to 26 September 1947:

Patients awaiting evacuation
as of 26 September 1947:

| | | |
|-----------|------|-----|
| JAPAN | 3.8 | 205 |
| KOREA | 2.2* | 17 |
| PHILRYCOM | 2.3 | 23 |
| MARBO | 4.2 | 14 |
| THEATER | 3.2 | |

Hospitalization:

1. The Bed Status Report as of 26 September 1947 was as follows:

| | <u>Total T/O Beds Present</u> | <u>Total T/O Beds Establ.</u> | <u>Total T/O Beds Occupd.</u> | <u>% T/O Beds Occupied</u> | <u>% Operating Beds Occupd.</u> |
|-----------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------------|-------------------------------------|
| JAPAN | 4,450 | 4,450 | 2,422 | 54 | 54 |
| KOREA | 2,050 | 1,456 | 773 | 38 | 53 |
| PHILRYCOM | 2,350 | 2,028 | 1,480 | 63 | 73 |
| MARBO | 575 | 575 | 314 | 55 | 55 |
| THEATER | 9,425 | 8,509 | 4,989 | 53 | 53 |

2. Tables showing various admission rates per 1,000 per annum:

| <u>Week ending</u> | <u>THEATER</u> | <u>JAPAN</u> | <u>KOREA</u> | <u>PHILRYCOM</u> | <u>MARBO</u> |
|--------------------|----------------|--------------|--------------|------------------|--------------|
| <u>All Causes</u> | | | | | |
| 5 September 1947 | 641 | 657 | 831 | 549 | 355 |
| 12 September 1947 | 667 | 668 | 835 | 616 | 361 |
| 19 September 1947 | 648 | 704 | 725 | 557 | 376 |
| 26 September 1947 | 644 | 665 | 786 | 585 | 347 |

| | | | | | |
|-------------------|-----|-----|-----|-----|-----|
| <u>Disease</u> | | | | | |
| 5 September 1947 | 579 | 590 | 770 | 497 | 293 |
| 12 September 1947 | 613 | 608 | 783 | 576 | 304 |
| 19 September 1947 | 589 | 639 | 671 | 513 | 312 |
| 26 September 1947 | 582 | 613 | 713 | 514 | 286 |

| | | | | | |
|-------------------|----|----|----|----|----|
| <u>Injury</u> | | | | | |
| 5 September 1947 | 62 | 67 | 61 | 53 | 62 |
| 12 September 1947 | 54 | 60 | 52 | 41 | 57 |
| 19 September 1947 | 58 | 65 | 54 | 44 | 64 |
| 26 September 1947 | 61 | 53 | 73 | 71 | 61 |

| | | | | | |
|--------------------|----|----|----|----|----|
| <u>Psychiatric</u> | | | | | |
| 5 September 1947 | 15 | 17 | 11 | 9 | 27 |
| 12 September 1947 | 17 | 15 | 17 | 13 | 45 |
| 19 September 1947 | 21 | 17 | 18 | 28 | 36 |
| 26 September 1947 | 14 | 15 | 12 | 12 | 17 |

*Patients evacuated by air to Japan from Korea for onward evacuation.

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| <u>Week ending</u> | <u>THEATER</u> | <u>JAPAN</u> | <u>KOREA</u> | <u>PHILRYCOM</u> | <u>MARBO</u> |
|-----------------------------------|----------------|--------------|--------------|------------------|--------------|
| <u>Common Respiratory Disease</u> | | | | | |
| 5 September 1947 | 75 | 71 | 85 | 90 | 19 |
| 12 September 1947 | 95 | 98 | 113 | 89 | 48 |
| 19 September 1947 | 92 | 104 | 91 | 99 | 11 |
| 26 September 1947 | 102 | 107 | 142 | 86 | 17 |
| <u>Influenza</u> | | | | | |
| 5 September 1947 | 2.9 | 5 | 1 | 1 | 0 |
| 12 September 1947 | 3 | 5.9 | 0 | 0 | 0 |
| 19 September 1947 | 3 | 2.7 | 1 | 4 | 0 |
| 26 September 1947 | 2.2 | 3.2 | 1 | 1 | 0 |
| <u>Primary Atypical Pneumonia</u> | | | | | |
| 5 September 1947 | 6.2 | 7.7 | 8 | 3.1 | 0 |
| 12 September 1947 | 7.9 | 7.7 | 17 | 2 | 2.8 |
| 19 September 1947 | 6.2 | 7.4 | 10 | 1 | 5 |
| 26 September 1947 | 7.2 | 8.3 | 12 | 2 | 0 |
| <u>Common Diarrhea</u> | | | | | |
| 5 September 1947 | 8.2 | 3.2 | 24 | 9.5 | 0 |
| 12 September 1947 | 9.9 | 3.2 | 29 | 13 | 0 |
| 19 September 1947 | 9.1 | 9.7 | 13 | 6.1 | 2.7 |
| 26 September 1947 | 7.5 | 6 | 12 | 9 | 0 |
| <u>Bacillary Dysentery</u> | | | | | |
| 5 September 1947 | .9 | 1.4 | 0 | 1 | 0 |
| 12 September 1947 | 1.4 | 0 | 0 | 6 | 0 |
| 19 September 1947 | .6 | 0 | 1 | 2 | 0 |
| 26 September 1947 | .5 | .4 | 0 | 1 | 0 |
| <u>Amebic Dysentery</u> | | | | | |
| 5 September 1947 | .7 | 0 | 0 | 3.1 | 0 |
| 12 September 1947 | 2.5 | 0 | 0 | 1.2 | 0 |
| 19 September 1947 | 1.4 | .5 | 0 | 5.1 | 0 |
| 26 September 1947 | .7 | 0 | 0 | 3 | 0 |
| <u>Malaria</u> | | | | | |
| 5 September 1947 | 28 | 2.3 | 51 | 76 | 8 |
| 12 September 1947 | 22 | 2.3 | 35 | 60 | 20 |
| 19 September 1947 | 22 | .5 | 14 | 76 | 17 |
| 26 September 1947 | 24 | 1.8 | 31 | 78 | 12 |
| <u>Infectious Hepatitis</u> | | | | | |
| 5 September 1947 | 2.9 | 2.3 | 3.6 | 3.1 | 5 |
| 12 September 1947 | 3.2 | 3.2 | 3.6 | 3.2 | 2.8 |
| 19 September 1947 | 3.2 | 4.2 | 3 | 2 | 2.7 |
| 26 September 1947 | 4.8 | 4.1 | 5 | 8 | 0 |

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| <u>Week ending</u> | <u>THEATER</u> | <u>JAPAN</u> | <u>KOREA</u> | <u>PHILRYCOM</u> | <u>MARBO</u> |
|-------------------------------------|----------------|--------------|--------------|------------------|--------------|
| <u>Organic Neurological Disease</u> | | | | | |
| 5 September 1947 | .4 | 0 | 2 | 0 | 0 |
| 12 September 1947 | 0 | 0 | 0 | 0 | 0 |
| 19 September 1947 | .5 | 0 | 2 | 0 | 2 |
| 26 September 1947 | .2 | .4 | 0 | 0 | 0 |
| <u>Mycotic Dermatoses</u> | | | | | |
| 5 September 1947 | 5 | 4.5 | 8 | 6 | 3 |
| 12 September 1947 | 9.9 | 9.6 | 11 | 12 | 6 |
| 19 September 1947 | 6.2 | 6.9 | 11 | 3 | 0 |
| 26 September 1947 | 6.3 | 6.5 | 9 | 5 | 3 |
| <u>Venereal Disease</u> | | | | | |
| 5 September 1947 | 75 | 86 | 81 | 67 | 10 |
| 12 September 1947 | 92 | 102 | 111 | 77 | 28 |
| 19 September 1947 | 91 | 122 | 77 | 64 | 11 |
| 26 September 1947 | 96 | 126 | 90 | 63 | 14 |

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Articles for Publication in Circular

It is desired that the Monthly Circular Letter published by the Medical Section GHQ, FEC be of maximum value to all of the Medical Department personnel in the field. To that end, articles of professional or administrative nature that might be of general interest are needed. All Medical Department officers as well as the Commanding Officers of Medical Department units and the Surgeons of the major commands are solicited for articles of administrative or technical value. Such articles should be forwarded so as to reach the Medical Section, FEC, not later than the 20th of the month preceding the publication of the circular in which it is to appear.

Attorney for Examination in Criminal

It is desired that the Monthly Criminal Letter published by the Medical Section and the Medical Department personnel in the field. To that end, articles of professional or administrative nature should be of general interest and useful. All Medical Department officers as well as the Commanding Officers of Medical Department units and the Surgeons of the major commands are requested for articles of administrative or professional nature. Such articles should be forwarded as soon as possible to the Medical Section, not later than the 15th of the month preceding the publication of the circular in which it is required.

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